REMARKS

Reconsideration and the timely allowance of the pending claims, in view of the following remarks, are respectfully requested.

In the Office Action dated September 29, 2005, the Examiner rejected claims 1, 5, 21, and 25-26, under 35 U.S.C. §102(b), as allegedly being anticipated by Korenaga'721 (U.S. Patent Pub. No. 2002/0145721); rejected claims 1 and 21, under 35 U.S.C. §102(b), as allegedly being anticipated by Tiedtke '484 (D.E. 43 29 484); rejected claims 2 and 22-23, under 35 U.S.C. §103(a), as allegedly being unpatentable over Korenaga'721 in view of Kurosawa'716 (U.S. Patent Pub. No. 2002/0145716); rejected claims 3-4, under 35 U.S.C. §103(a), as allegedly being unpatentable over Korenaga'721 in view of Kurosawa'716 and Cutler '674 (U.S. Patent Pub. No. 2001/0029674); and rejected claims 9-10 and 27-28, under 35 U.S.C. §103(a), as allegedly being unpatentable over Korenaga'721 in view of Cutler '674 (U.S. Patent Pub. No. 2001/0029674).

By this Amendment, Applicants have amended claims 1 and 21 to provide a clearer presentation of the claimed subject matter. Applicants submit that no new matter has been introduced. As such, claims 1-10 and 21-28 are currently presented for examination, of which claims 1 and 21 are independent.

Applicants respectfully traverse the prior art rejections, under 35 U.S.C. §102(b), §103(a) for the reasons presented below

I. Prior Art Rejections Under 35 U.S.C. §102(b), §103(a).

As indicated above, amended independent claim 1 now positively recites that the control unit is configured to produce a signal indicative of the control force based on the signal indicative of the difference between the desired mass position and the actual mass position. Furthermore, claim 1 also positively recites that the estimator unit is configured to calculate an estimated relation between the signal indicative of the

control force and status information of said mass in which the status information comprises an indication of at least one of a position of the mass, a velocity of the mass, and an acceleration of the mass. These features are amply supported by the embodiments described in the Specification. (*See, e.g.,* Specification, par. **[00077]** – **[00079]**; **[00085]**-**[00097]**; FIGs. 2, 3).

Unlike the present invention, there is nothing in the references of record that teach or suggest the combination of features recited in claim 1. In particular, the Korenaga '721 reference discloses three systems, a fine motion linear motor position servo system **125**, a movement feedback system **135**, and a feed-forward system **131**. (*See,* Korenaga '721, par. **[0053]**; FIG. 2). Regarding the fine motion linear motor position servo **125**, the reference discloses that the calculating means **126**, which the Examiner alleged corresponds to the claimed comparator, calculates a difference between a current target position of the stage as specified by a position profile producing means **122** and the current position of the stage **101** as measured by an interferometer **128**. (*See,* Korenaga '721, par. **[0054]**; FIG. 2). Korenaga '721 further discloses that correcting means **132**, adjusting means **133**, and electromagnetic amplifiers **134**, which the Examiner alleged corresponds to the claimed control unit, are actually part of feed-forward system **131** that produces a combined thrust proportional to the output of the acceleration profile producing means **123**. (*See,* Korenaga '721, par. **[0055]**; FIG. 2).

As indicated in FIG. 2, the Korenaga '721 feed-forward system **131** control unit does not produce a signal indicative of the control force based on the signal indicative of the difference between said desired mass position and said actual mass position, as required by claim 1. That is, there is no way that the output of the calculating means **126** is supplied to the feed-forward system **131** control unit to provide a signal indicative of the control force based on the desired mass and actual mass position difference signal. Rather, the only input to the feed-forward system **131** control unit is from the acceleration profile producing means **123,** as discussed above.

Moreover, Korenaga '721 discloses that the position profile producing means **122**, which the Examiner alleged corresponds to the claimed estimator unit, generates the relationship between the time and the stage target position corresponding to that time. The reference further discloses that the acceleration profile producing means **123**, which the Examiner also alleged as corresponding to the claimed estimator unit, generates a relationship between the time and the acceleration to be provided during that time. (*See,* Korenaga '721, par. **[0052]**; FIG. 2).

In so doing, the Korenaga '721 reference clearly fails to teach or suggest calculating the estimated relation between the signal indicative of the control force and status information of the mass in which the status information comprises an indication of at least one of a position of the mass, a velocity of the mass, and an acceleration of the mass, as required by claim 1. Specifically, both position profile producing means **122** and acceleration profile producing means **123** are inputs to the Korenaga '721 system (*i.e.*, fine motion linear motor position servo **125**, movement feedback system **135**, and feed-forward system **131**), so that they cannot, in any way, estimate a relation based on the control force signal generated by the control unit and the mass status information.

Applicants further submit that, as best understood, the Tiedtke '484 reference fails to cure the deficiencies identified above. That is, as can be determined from the Tiedtke '484 English abstract and figures, as filed in the IDS of July 15, 2004, Tiedtke '484 does not teach the combination of elements recited in claim 1. Applicants note that the Examiner cited specific portions of the Tiedtke '484 reference, which is in German. It, therefore, appears that the Examiner is relying on an English translation of the reference. Applicants respectfully request that if the Examiner persists on invoking this reference as prior art, that he furnish a copy of whatever translation of the reference he is relying on to maintain his rejections. Otherwise, the rejection should be withdrawn.

Applicants submit that none of the remaining references, whether taken alone or in reasonable combination with Korenaga '721 (or for that matter, Tiedtke '484) teach the claimed combination of elements as recited in claim 1. For example, the

Kurosawa'716 reference is directed to exposing a pattern onto a target locus that includes correction of the target locus. (*See,* Kurosawa'716, par. **[0007]**). As such, Kurosawa'716 merely teaches the use of approximating a quadratic shape for data in a correction table via a least squares method. (*See,* Kurosawa'716, par. **[0059]**; FIG. 2).

The Cutler '674 reference is directed to non-contact, small displacement sensors to determine Abbe errors. (*See,* Cutler '674, par. **[0014]**). Along these lines, Cutler '674 merely teaches the use of a 4th-order low-pass profiling filter **78** and an adder **80**, which operates as a high-pass filter to form an acceleration feed forward signal.. (*See,* Cutler '674, par. **[0036]**, **[0038]**; FIG. 2).

For at least these reasons, Applicants submit that none of these references, whether taken alone or in reasonable combination, teach the claimed combination of elements recited by amended claim 1. Thus, claim 1 is patentable over the references. And, because claims 2-10 depend from claim 1, claims 2-10 are also patentable by virtue of dependency as well as for their additional recitations. Accordingly, Applicants request the immediate withdrawal of the prior art rejections of claims 1-10.

Moreover, because independent claim 21 recites features that are similar to the patentable features discussed above regarding claim 1, claim 21 is also patentable for the same reasons presented above. And, because claims 21-28 depend from independent claim 21, claims 21-28 are patentable at least by virtue of dependency as well as for their additional recitations. Accordingly, Applicants request the immediate withdrawal of the prior art rejections of claims 21-28.

II. Conclusion.

All matters having been addressed and in view of the foregoing, Applicants respectfully request the entry of this Amendment, the Examiner's reconsideration of this application, and the immediate allowance of pending claims 1-10 and 21-28.

Applicants' Counsel remains ready to assist the Examiner in any way to facilitate and expedite the prosecution of this matter. Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The

Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

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